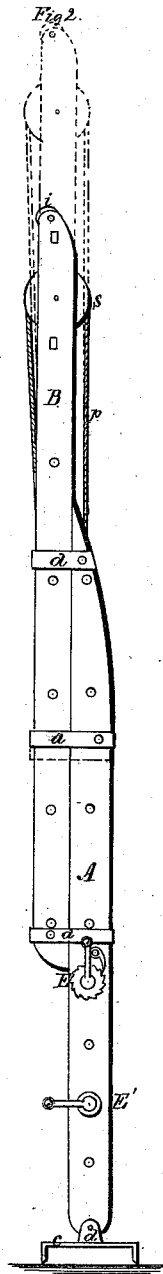
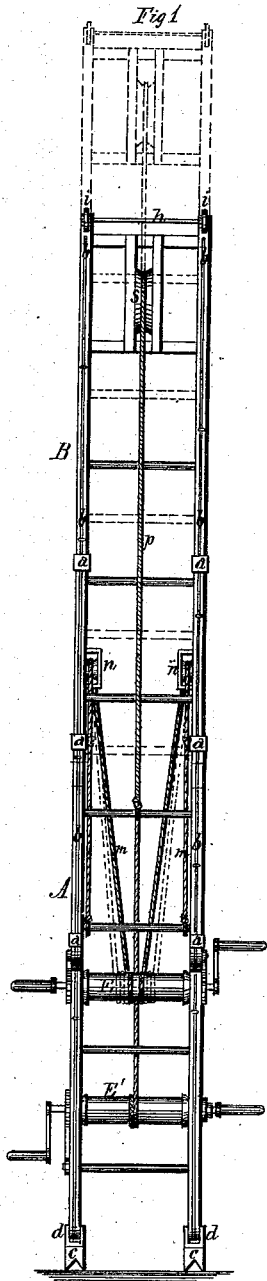


H. BASTIAN, Sr.
Extension Ladder.

No. 162,882.

Patented May 4, 1875.



WITNESSE S.

M. Lemon.
J. W. Larner.

INVENTOR,

H. Bastian, Sr.
per *F. W. Lehmann* ATTOR.

UNITED STATES PATENT OFFICE.

HENRY BASTIAN, SR., OF MONTOURSVILLE, PENNSYLVANIA.

IMPROVEMENT IN FIREMEN'S EXTENSION-LADDERS.

Specification forming part of Letters Patent No. 162,882, dated May 4, 1875; application filed April 12, 1875.

To all whom it may concern :

Be it known that I, HENRY BASTIAN, Sr., of Montoursville, in the county of Lycoming and State of Pennsylvania, have invented certain new and useful Improvements in Extension-Ladders; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

The nature of my invention consists in the construction and arrangement of the feet of extension-ladders, for the use of firemen and others, as will be hereinafter more fully set forth.

In the annexed drawings my invention is fully illustrated.

A and B represent two ladders, connected by suitable guide-loops *a a*, so that one can slide easily on the other.

In the construction of these ladders I use metal rods or heavy wires *b b*, which are embedded in longitudinal grooves made in the edges of their side pieces, and held therein by staples driven into the wood, or other suitable means. The lower ladder A is, at its lower end, provided with feet C C, which are formed with teeth at their ends, and provided with stirrups *d d*, which straddle and are

pivoted to the lower ends of the side pieces of the ladder. At the upper end of the upper ladder B is a horizontal shaft, *h*, provided with rollers *i i*, which are to work against the wall in raising the ladder, and thus greatly facilitate the extension thereof. The ladder is extended in the usual manner, by means of windlass E arranged in the lower ladder A, at a suitable height from the ground, and provided with pawls and ratchets. From one of the windlasses ropes *m m* pass over suitable pulley *n n*, for raising the ladder B, and from the other windlass E' a rope, *p*, passes over a pully, *s*, for hoisting the hose.

To these elevating and lowering devices I lay no claim.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The toothed feet C C, connected by means of pivoted stirrups *d d* to the lower ends of the ladder A, as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 5th day of April, 1875.

HENRY BASTIAN, SR.

Witnesses:

H. G. LICHTENTHALER,
D. LICHTENTHALER.